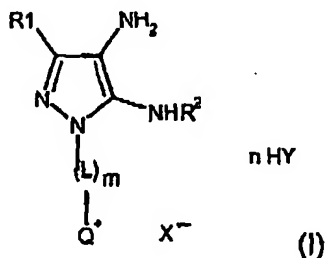


CLAIMS

1. Cationic 4,5-diaminopyrazole derivatives of general formula (I)



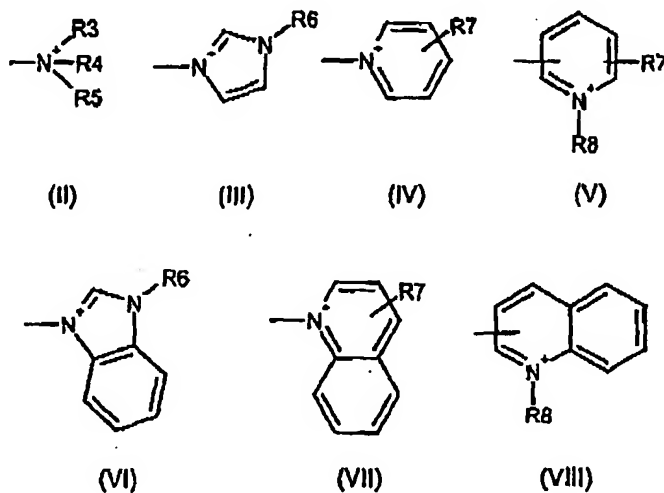
wherein

R1 denotes hydrogen, a straight-chain or branched (C₁-C₆)-alkyl group, a (C₁-C₄)-hydroxyalkyl group, a (C₁-C₄)-aminoalkyl group, a (C₁-C₈)-alkylamino group, a di(C₁-C₈)-alkylamino group, a (C₁-C₄)-alkylamino-(C₁-C₄)-alkyl group or a di(C₁-C₄)-alkylamino-(C₁-C₄)-alkyl group, a benzyl group, an aryl group or a heteroaryl group;

R2 denotes hydrogen, a (C₁-C₆)-alkyl group, a (C₂-C₄)-hydroxyalkyl group, a (C₃-C₆)-polyhydroxyalkyl group, an alkoxyalkyl group with 2 to 6 carbon atoms or a benzyl group;

L denotes a bridging group between the pyrazole ring and the quaternary group and consists of a phenylene diradical or a (C₁-C₂)-alkylene diradical;

Q⁺ stands for a saturated cationic group of formula (II) or an unsaturated cationic group of formula (III) to (V) or for a benzoaromatic analog thereof of formula (VI) to (VIII)



wherein

R3 to **R5** can be equal or different and independently of each other denote a straight-chain or branched (C₁-C₆)-alkyl group, a (C₂-C₄)-hydroxyalkyl group, (C₃-C₆)-dihydroxyalkyl group, a (C₃-C₆)-polyhydroxyalkyl group or a (C₁-C₆)-alkoxy-(C₁-C₄)-alkyl group; or two of the **R3** to **R5** groups together with the nitrogen atom to which they are linked forming a five-membered or six-membered heterocycle and possibly having one or more heteroatoms and additional substituents ;

R6 denotes a straight-chain or branched (C₁-C₈)-alkyl group, an allyl group, a vinyl group, a hydroxyethyl group or a benzyl group;

R7 stands for a hydrogen atom, a straight-chain or branched (C₁-C₉)-alkyl group, an amino group, a mono-(C₁-C₆)-alkylamino group, a di(C₁-C₆)-alkylamino group or a pyrrolidino group;

R8 stands for a straight-chain or branched (C₁-C₈)-alkyl group, an allyl group, a vinyl group, a hydroxyethyl group, a dihydroxypropyl group or a benzyl group,

X⁻ denotes a monovalent or polyvalent anion,

HY stands for an inorganic or organic acid,

m is equal to 0 or 1, and

n has a value between 0 and 2.

2. Cationic 4,5-diaminopyrazole derivative as defined in claim 1, characterized in that

R1 denotes hydrogen, a methyl group or a phenyl group;

R2 denotes hydrogen or a methyl group;

R3 to **R5** can be equal or different and independently of each other denote a methyl group, ethyl group or hydroxyethyl group; or two of the **R3** to **R5** group together with the nitrogen atom to which they are linked forming a pyrrolidino group, morpholino group or N-methylpiperazino group;

R6 stands for a methyl group or a hydroxyethyl group;

R7 stands for hydrogen, a methyl group, a p-dimethylamino group or a p-pyrrolidino group;

R8 denotes a methyl group, ethyl group or hydroxyethyl group;

X⁻ denotes a chloride, bromide, methylsulfate, toluenesulfonate, sulfate, phosphate, acetate or tartrate anion;

L denotes a (C₁-C₂)-alkylene diradical and **m** is equal to 1;

HY stands for hydrochloric acid, sulfuric acid, phosphoric acid, acetic acid or tartaric acid, and

n has a value between 0 and 2.

3. Cationic 4,5-diaminopyrazole derivative as defined in claim 1 or 2, characterized in that it is selected from among

3-[(4,5-diamino-1H-pyrazol-1-yl)methyl]-1-methylpyridinium methylsulfate dihydrochloride,

4-[(4,5-diamino-1H-pyrazol-1-yl)methyl]-1-methylpyridinium methylsulfate dihydrochloride,

2-[(4,5-diamino-1H-pyrazol-1-yl)methyl]-1-methylpyridinium methylsulfate dihydrochloride,

4-[(4,5-diamino-1H-pyrazol-1-yl)methyl]-1-methylquinolinium methylsulfate dihydrochloride,

3-[(4,5-diamino-1H-pyrazol-1-yl)methyl]-1-methylquinolinium methylsulfate dihydrochloride,

4-[2-(4,5-diamino-1H-pyrazol-1-yl)ethyl]-1-methylpyridinium methylsulfate dihydrochloride,

2-(4,5-diamino-1H-pyrazol-1-yl)-N,N,N-trimethylethanaminium chloride dihydrochloride, 1-[2-(4,5-diamino-1H-pyrazol-1-yl)ethyl]-1-methylpyrrolidinium chloride dihydrochloride, 4-[2-(4,5-diamino-1H-pyrazol-1-yl)ethyl]-4-methylmorpholin-4-ium chloride dihydrochloride and 3-[2-(4,5-diamino-1H-pyrazol-1-yl)ethyl]-1-methyl-1H-imidazol-3-ium chloride dihydrochloride.

4. Agent for oxidative coloring keratin fibers, characterized in that it contains at least one cationic 4,5-diaminopyrazole derivative as defined in one of claims 1 to 3.

5. Agent as defined in claim 4, characterized in that it contains the cationic 4,5-diaminopyrazole derivative in an amount from 0.005 to 20 weight percent.

6. Agent as defined in claim 4 or 5, characterized in that it contains additionally at least one other developer and/or coupler and/or at least one direct anionic, cationic, amphoteric or nonionic dye.

7. Agent as defined in one of claims 4 to 6, characterized in that it has a pH of 3 to 11

8. Agent as defined in one of claims 4 to 7, characterized in that it is mixed with an oxidant before use.

9. Agent as defined in one of claims 4 to 8, characterized in that it is a hair colorant.

10. Process for preparing a cationic 4,5-diaminopyrazole derivative of formula (I) as defined in claim 1 whereby first the 4,5-diaminopyrazole derivative is protected against the subsequently used alkylating agent by introduction of a protective group, then the protected pyrazole derivative is either extracted from a homogeneous mixture with a water-immiscible solvent or - in the event that the reaction is carried out in two phases - the organic phase is separated and worked up after which, in a suitable solvent, the quaternizable nitrogen in the side chain is alkylated, the resulting quaternary ammonium salts are separated and the protective group is then removed in an acidic medium.

11. Process as defined in claim 10, characterized in that the protective group used is a t-butoxycarbonyl group obtained by reaction of the pyrazole with di-tert-butyl dicarbonate.

12. Process as defined in claim 10 or 11, characterized in that the alkylating agent used is dimethyl sulfate, dimethyloxonium tetrafluoroborate or diethyloxonium tetrafluoroborate.

13. Process as defined in one of claims 10 to 12, characterized in that the alkylation is carried out at a temperature from 20 to 60 °C.

14. Process as defined in one of claims 10 to 13, characterized in that the alkylation is carried out in ethyl acetate, dioxane, acetone, tetrahydrofuran, acetonitrile, butyronitrile, 3-methoxypropionitrile or a mixture of these solvents.

15. Process as defined in one of claims 10 to 14, characterized in that the protective group is removed by use of a mixture of hydrochloric acid and dioxane.